

General

Title

Laminectomy or spinal fusion: laminectomy or spinal fusion area rate.

Source(s)

AHRQ quality indicators. Guide to inpatient quality indicators: quality of care in hospitals - volume, mortality, and utilization [version 3.1]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2007 Mar 12. 91 p.

AHRQ quality indicators. Inpatient quality indicators: technical specifications [version 4.2]. IQI #29 laminectomy or spinal fusion area rate. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2010 Sep. 1 p.

Measure Domain

Primary Measure Domain

Use of Services

The validity of measures depends on how they are built. By examining the key building blocks of a measure, you can assess its validity for your purpose. For more information, visit the [Measure Validity](#) page.

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the number of laminectomies or spinal fusions per 100,000 population in Metro Area* or county.

*The term "metropolitan area" (MA) was adopted by the U.S. Census in 1990 and referred collectively to metropolitan statistical areas (MSAs), consolidated metropolitan statistical areas (CMSAs) and primary metropolitan statistical areas (PMSAs). In addition, "area" could refer to either 1) FIPS county, 2) modified FIPS county, 3) 1999 OMB Metropolitan Statistical Area or 3) 2003 OMB Metropolitan Statistical Area. Micropolitan Statistical Areas are not used in the QI software.

Rationale

Laminectomy is performed on patients with a herniated disc or spinal stenosis. No ideal rate of laminectomy has been established. Laminectomy, which is a potentially overused procedure, has been shown to vary widely and systematically between areas. Although the ideal rate for laminectomy has not been established, several studies have noted relatively high rates of inappropriate procedures (23% to 38%).

As an area utilization indicator*, laminectomy is a proxy for actual quality problems. The indicator has unclear construct validity, as high utilization of laminectomy has not been shown to necessarily be associated with higher rates of inappropriate utilization. Caution should be maintained for laminectomy rates that are drastically below or above the average or recommended rates.

*The following caveats were identified from the literature review for the "Laminectomy Area Rate" indicator:

Proxy^b: Indicator does not directly measure patient outcomes but an aspect of care that is associated with the outcome; thus, it is best used with other indicators that measure similar aspects of care.

Unclear construct^b: There is uncertainty or poor correlation with widely accepted process measures.

Unclear benchmark^b: The "correct rate" has not been established for the indicator; national, regional, or peer group averages may be the best benchmark available.

Refer to the original measure documentation for further details.

Note:

b - Indicates that the concern has been demonstrated in the literature.

Primary Clinical Component

Laminectomy; spinal fusion; herniated disc; spinal stenosis

Denominator Description

Population in Metro Area or county, age 18 years and older

Numerator Description

Discharges age 18 years and older with a laminectomy or spinal fusion procedure

Exclude cases:

Major Diagnostic Category (MDC) 14 (pregnancy, childbirth, puerperium)

Note: Refer to the Technical Specifications document for specific International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) codes.

Evidence Supporting the Measure

Evidence Supporting the Value of Monitoring Use of Service

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Evidence Supporting Need for the Measure

Need for the Measure

Monitoring and planning

Variation in use of service

Evidence Supporting Need for the Measure

AHRQ quality indicators. Guide to inpatient quality indicators: quality of care in hospitals - volume, mortality, and utilization [version 3.1]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2007 Mar 12. 91 p.

State of Use of the Measure

State of Use

Current routine use

Current Use

External oversight/State government program

Monitoring and planning

Application of Measure in its Current Use

Care Setting

Hospitals

Professionals Responsible for Health Care

Physicians

Public Health Professionals

Lowest Level of Health Care Delivery Addressed

Counties or Cities

Target Population Age

Age greater than or equal to 18 years

Target Population Gender

Either male or female

Stratification by Vulnerable Populations

Unspecified

Characteristics of the Primary Clinical Component

Incidence/Prevalence

In an assessment of cases at one Swiss hospital, 23% of patients received surgical treatment for herniated discs for inappropriate reasons and 29% received surgical treatment for uncertain indications. In another study of teaching hospital patients undergoing surgery for herniated disc or spinal stenosis, 38% of surgeries were performed for inappropriate indications.

Evidence for Incidence/Prevalence

Porchet F, Vader JP, Larequi-Lauber T, Costanza MC, Burnand B, Dubois RW. The assessment of appropriate indications for laminectomy. J Bone Joint Surg Br. 1999 Mar;81B(2):234-9. [PubMed](#)

Association with Vulnerable Populations

Unspecified

Burden of Illness

Unspecified

Utilization

Unspecified

Costs

Unspecified

Institute of Medicine (IOM) Healthcare Quality Report Categories

IOM Care Need

Not within an IOM Care Need

IOM Domain

Not within an IOM Domain

Data Collection for the Measure

Case Finding

Both users and nonusers of care

Description of Case Finding

Population in Metro Area or county, age 18 years and older

Denominator Sampling Frame

Geographically defined

Denominator Inclusions/Exclusions

Inclusions

Population in Metro Area or county, age 18 years and older

Exclusions

Unspecified

Relationship of Denominator to Numerator

All cases in the denominator are not equally eligible to appear in the numerator

Denominator (Index) Event

Patient Characteristic

Denominator Time Window

Time window is a single point in time

Numerator Inclusions/Exclusions

Inclusions

Discharges age 18 years and older with a laminectomy or spinal fusion procedure

Note: Refer to the Technical Specifications document for specific International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) codes.

Exclusions

Exclude cases:

Major Diagnostic Category (MDC) 14 (pregnancy, childbirth, puerperium)

Measure Results Under Control of Health Care Professionals, Organizations and/or Policymakers

The measure results are somewhat or substantially under the control of the health care professionals, organizations and/or policymakers to whom the measure applies.

Numerator Time Window

Institutionalization

Data Source

Administrative data

Level of Determination of Quality

Does not apply to this measure

Pre-existing Instrument Used

Unspecified

Computation of the Measure

Scoring

Rate

Interpretation of Score

Undetermined

Allowance for Patient Factors

Analysis by subgroup (stratification on patient factors, geographic factors, etc.)

Description of Allowance for Patient Factors

Observed (raw) rates may be stratified by areas (Metro Area or counties), age groups, race/ethnicity categories, and sex.

Risk adjustment of the data is recommended using, at minimum, age and sex.

Application of multivariate signal extraction (MSX) to smooth risk adjusted rates is also recommended.

Standard of Comparison

External comparison at a point in time

External comparison of time trends

Internal time comparison

Evaluation of Measure Properties

Extent of Measure Testing

Each potential quality indicator was evaluated against the following six criteria, which were considered essential for determining the reliability and validity of a quality indicator: face validity, precision, minimum bias, construct validity, fosters real quality improvement, and application. The project team searched Medline for articles relating to each of these six areas of evaluation. Additionally, extensive empirical testing of all potential indicators was conducted using the 1995-97 Healthcare Cost and Utilization Project (HCUP) State Inpatient Databases (SID) and Nationwide Inpatient Sample (NIS) to determine precision, bias, and construct validity. Table 2 in the original measure documentation summarizes the results of the literature review and empirical evaluations on the Inpatient Quality Indicators. Refer to the original measure documentation for details.

Evidence for Reliability/Validity Testing

AHRQ quality indicators. Guide to inpatient quality indicators: quality of care in hospitals - volume, mortality, and utilization [version 3.1]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2007 Mar 12. 91 p.

Identifying Information

Original Title

IQI #29 laminectomy or spinal fusion area rate.

Measure Collection Name

Agency for Healthcare Research and Quality (AHRQ) Quality Indicators

Measure Set Name

Inpatient Quality Indicators

Submitter

Agency for Healthcare Research and Quality - Federal Government Agency [U.S.]

Developer

Agency for Healthcare Research and Quality - Federal Government Agency [U.S.]

Funding Source(s)

Agency for Healthcare Research and Quality (AHRQ)

Composition of the Group that Developed the Measure

The Agency for Healthcare Research and Quality (AHRQ) Quality Indicators are in the public domain and the specifications come from multiple sources, including the published and unpublished literature, users, researchers, and other organizations. AHRQ as an agency is responsible for the content of the indicators.

Financial Disclosures/Other Potential Conflicts of Interest

None

Adaptation

The hospital-based rate of laminectomy was included in the original Healthcare Cost and Utilization Project Quality Indicator (HCUP QI) set.

Parent Measure

Laminectomy and/or spinal fusion (Agency for Healthcare Research and Quality)

Release Date

2002 Jun

Revision Date

2010 Sep

Measure Status

This is the current release of the measure.

This measure updates previous versions:

AHRQ quality indicators. Guide to inpatient quality indicators: quality of care in hospitals -- volume, mortality, and utilization [version 3.0]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2006 Feb 20. 99 p.

AHRQ quality indicators. Inpatient quality indicators: technical specifications [version 4.1]. IQI #29 laminectomy or spinal fusion area rate. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2009 Dec 1. 1 p.

Source(s)

AHRQ quality indicators. Guide to inpatient quality indicators: quality of care in hospitals - volume, mortality, and utilization [version 3.1]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2007 Mar 12. 91 p.

AHRQ quality indicators. Inpatient quality indicators: technical specifications [version 4.2]. IQI #29 laminectomy or spinal fusion area rate. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2010 Sep. 1 p.

Measure Availability

The individual measure, "IQI #29 Laminectomy or Spinal Fusion Area Rate," is published in "AHRQ Quality Indicators. Guide to Inpatient Quality Indicators: Quality of Care in Hospitals -- Volume, Mortality, and Utilization" and "AHRQ Quality Indicators. Inpatient Quality Indicators: Technical Specifications." These documents are available in Portable Document Format (PDF) from the [Inpatient Quality Indicators Resources](#) page at the Agency for Healthcare Research and Quality (AHRQ) Quality Indicators Web site.

For more information, please contact the QI Support Team at support@qualityindicators.ahrq.gov.

Companion Documents

The following are available:

AHRQ quality indicators. Inpatient quality indicators: software documentation, SAS [version 4.2]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2010 Sep. 41 p. This document is available in Portable Document Format (PDF) from the [Agency for Healthcare Research and Quality \(AHRQ\) Quality Indicators Web site](#) .

AHRQ quality indicators. Software documentation: Windows [version 4.1a]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2010 Jul 2. 97 p. This document is available in PDF from the [AHRQ Quality Indicators Web site](#) .

AHRQ quality indicators. Inpatient quality indicators composite measure workgroup. Final report. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2008 Mar. various p. This document is available in PDF from the [AHRQ Quality Indicators Web site](#) .

UCSF-Stanford Evidence-based Practice Center. Davies GM, Geppert J, McClellan M, et al. Refinement of the HCUP quality indicators. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2001 May. 24 p. (Technical review; no. 4). This document is available in PDF from the [AHRQ Quality Indicators Web site](#) .

AHRQ quality indicator. Comparative data for the IQI based on the 2008 Nationwide Inpatient Sample (NIS) [version 4.1b]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2010 Sep. 20 p. This document is available in PDF from the [AHRQ Quality Indicators Web site](#) .

AHRQ quality indicator. Risk adjustment coefficients for the IQI [version 4.2]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2010 Sep. 20 p. This document is available in PDF from the [AHRQ Quality Indicators Web site](#) .

AHRQ quality indicators. Composite measures user guide for the inpatient quality indicators (IQI) [version 4.2]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2010 Sep. 6 p. This document is available in PDF from the [AHRQ Quality Indicators Web site](#) .

HCUPnet: a tool for identifying, tracking, and analyzing national hospital statistics. [Web site]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); [accessed 2011 May 24]. HCUPnet is available from the [AHRQ Web site](#) . See the related [QualityTools](#) summary.

NQMC Status

This NQMC summary was completed by ECRI on February 3, 2006. The information was verified by the measure developer on March 6, 2006. This NQMC summary was updated by ECRI Institute on May 29, 2007, on October 20, 2008 and again on August 27, 2010. This NQMC summary was reviewed and edited by ECRI on July 13, 2011.

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